

14023 U.S. PTO

A. TITLE

PROCESS FOR APPLYING ADHESIVE PRODUCT FOR ADHERING ROOFING SHEETS TO A BUILDING ROOF

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C. DISCUSSION OF PRIOR ART AND BACKGROUND OF THE

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4			INVENTION

3	The application of protective roofing sheets, particularly rubber roofing sheets,
4	to the upper surface of a roof, involves the use and application of an adhesive product
5	applied to the upper surface of the roof infrastructure. After a minimum limited
6	waiting period of approximately ten minutes, the bottom surfaces of the roofing
7	sheets are adhered flush against the upper surface portion of the roof infrastructure
8.	on which the adhesive material is applied. This minimum waiting period causes
9	problems of the inefficiency in the overall installation process. This adhering process
10	is adapted to create a firm bond between the upper surface of the roof structure and
11	the roof covering sheets, and with the adhesive undersurface it creates a more
12	substantial moisture barrier to protect the integrity of the roof.
13	In the existing art, the adhesive glues or other substances presently used to
14	create this adhesion between the covering sheets and roof structure generally have a
15	significantly high viscosity. Because of this high viscosity, the process of applying the
16	adhesive substance to the roof infrastructure requires a heavy duty, high pressure
17	spray mechanism that involves expensive equipment. Moreover, because of the
18	significant viscosity of the adhesive substance used in this context, the sprayer must
19	be cleaned internally after each use, with solvents usually involving high pressure
20	injections. This itself has proven to be a time consuming procedure.
21	Yet another consideration that is of significance in the use of existing adhesive
22	substance or glues is that when applied to the upper surface of the base roof structure

the adhesive substance usually causes isolated globs or other imperfections 1. in the relative smoothness of the adhesive layering. These globs or imperfections 2 potentially eventually lead to blistering or bubble-like rises which ultimately lessen the adhesive strength the bond between the rubber roof sheets and the base roof structure. 5 Another problem in the use of existing adhesive material for fixing rubber roof 6 sheets to a building structure is the toxicity and environmental aspect. Almost all 7 existing adhesive substances on the market and in use today are comprised of chemicals that are dangerous to the environment and potentially toxic to humans. Because of this latter suspect and the other problems above discussed there is a 10 pressing need for improved adhesive substances in this area. 11 12 13 14 15 16 17 18 19

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1	D. OBJECTS OF INVENTION		
2	The following are objects of the subject invention:		
3	It is object of the subject invention to provide means to adhere rubber roof		
4	sheets to a roof infrastructure.		
5	It is also an object of the invention to provide improved process methods to		
6`	adhere rubber roof sheets to a roof infrastructure.		
7	An additional object of the subject invention is to provide an improved		
8	method of affixing roof sheets to the upper surface of a roof structure.		
9	A further object of the subject invention is to provide am improved process of		
10	applying an adhesive material to a roof structure.		
11 [:]	Yet another object of the subject invention is to provide an improved roof		
12	sheet adhering process that is relatively economical and safe to use from an		
13	environmental perspective.		
14	A further object of the subject invention is to provide efficient process and		
15	means to adhere roofing sheets to a roof base structure.		
16	Other and further objects of the subject invention can be seen in the		
17	following description and claims read in view of the drawings herein.		
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E. DESCRIPTION OF GENERAL EMBODIMENT AND SUMMARY OF

2	INVENTION	
3	The subject invention is a process for applying adhesive product for adhering roof	
4	covering sheets to the upper surface of a building, such process comprising applies in	
5	the following products in various combination ratios:	
6	(a) synthetic rubber and resin;	
7	(b) toluene;	
8	(c) cyclohexane;	
9	(d) dearomatised petrol;	
10	With such product being applied by utilizing a spraying device to apply such	
11	product in an even layered film and then adhering to the bottom surfaces of a roofing	
12	sheet over such applied film. This positioning of the rubber roof sheets is preferably	
13	consummated immediately after the application of the adhesive product. Additionall	
14	certain other compounds may be added to the above product to minimize the	
15	viscosity of the product and render the product more compatible with the	
16	environment.	
17	In using this general formulation to apply rubber roof sheets or other types of	
18	roof sheets to the upper surface of a roof, the product and process above described	
19	generates a less viscous adhering substance that can for a given volume of advance	
20	can cover, in some situations approximately ten times the surface area that existing	
21	adhering products are capable of covering. This aspect therefore means that a given	

volumetric unit of the subject product can replace a larger quantity of the existing adhering products to accomplish the same end result if adhering roofing sheets.

Additionally, the subject product as applied with the given process, as generally described has a substantially greater adhering capability and strength, with longer lasting adhering effects.

Further, in using the subject product there is no necessity to use a high pressure sprayer to apply the adhesive material by reason of a lower viscosity and no need use expensive time consuming procedures to clean the sprayer after each use. Indeed, most low pressure sprayers will be adequate to accomplish the spraying process in applying the subject adherent. Further the adhering substance herein can also be sued to spray and coat the insulation material used in the roofing infrastructure in order to protect the integrity thereof. The environmentally compatible aspects are such that the composition is easy to disintegrate into a relatively harmless way into the environment.

An additional attribute of this product is that the substance herein dries more quickly without bubbling and as a result the roofing sheets can be applied more quickly so as to render the overall adhesive and installation process more efficient, with the end product having a greater adhesive quality.

G. DESCRIPTION OF PREFERRED EMBODIMENT

2	In describing the preferred embodiment of the subject invention it is to be			
3	stressed that the following description is only of one specified embodiment of the			
4	invention. In so describing a specified embodiment no limitation on the scope of the			
5	subject invention will be construed as a result. Further, in describing the subject			
6	invention and the components of the adherent substance it is to be understood that			
7	the individual components, and specified application process as specifically			
8	delineated, may include other compounds, elements or process methods that fall			
9	within the same general chemical classification for such specific product. If such			
10	substitute substances or process means are not specifically described it shall not limit			
11	the scope of the invention and the claims herein.			
12	In the most general form of the embodiment of the subject invention, the			
13	product and process in this case involves as stated a formulation as described below:			
14	(a) synthetic rubber and resin 37%			
15	(b) toluene 10%			
16	(c) cyclohexane 29%			
17	(d) dearomatised petrol 24%			
18	It is to be noted that this formulation may vary from the percentages described			
19	above. Moreover, this formulation may be enhanced by the addition of various			
20	Hydrogen based compounds such as hydrogen sulfide and other certain hydrogen			
21	compounds. Additionally, certain nitrogen based compounds are helpful in this			
22	formulation. Either or both the hydrogen or nitrogen based compounds contribute to			

1	a certain degree to the lower viscosity of the product and its adherent quality is		
	helping to the ultimate adhesive quality of the product, as well lowering the		
2.	environmental and health problems that are attendant with other existing adhesive		
3	products used in this area.		
4	In the preferred embodiment, the subject invention compromises the process of		
5	applying the following product, or any variant thereof including other compounds		
6	hydrogen or nitrogen based compounds, or other additive.		
7	(a) synthetic rubber and resin		
8	(b) toluene		
9	(c) cyclohexane		
10	(d) dearomatised petrol		
11	Such application herein consummated by a sprayer applying a film of such product		
12	over a roof surface and then placing the bottom surface of one or more rubber roof		
13	sheets over the upper surface of such film of adhesive material.		
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1	in summary, the subject invention is a proce	oss of applying an auticsive for auticining	
2	roofing sheets to a roof surface comprised of spraying an adhesive product comprising:		
3	(a) synthetic rubber and resin;		
4	(b) toluene;		
5	(c) cyclohexane;		
6	(d) dearomatised petrol;		
7	and after application of such adhesive product for s	uch roof surface, placing the bottom surface of	
8	such rubber roof sheets over such roof surface to w	which such adhesive is applied.	
9	In further summary the subject invention is an adherent for roofing sheets comprised in the		
10	following ratios of:		
11	(a) synthetic rubber and resin	37%	
12	(b) toluene	10%	
13	(c) cyclohexane	29%	
14	(d) dearomatised petrol	24%	
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